

CLAIMS

1. A method for screening a sample containing a nucleic acid for the presence of an organism for which a nucleotide sequence is not known comprising the steps of:
- 5 sequencing all nucleic acid in a sample;
comparing the nucleotide sequence obtained in said sequencing step to nucleotide sequences from known organisms;
- 10 identifying a continuous run of nucleotide sequence as not corresponding to a known nucleotide sequence; and
confirming the continuous run of nucleotide sequence as a nucleotide sequence of an organism for which the nucleotide sequence was not otherwise known.
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2. The method as recited in claim 1 wherein said sequencing step comprises the step of sequencing the nucleic acid by hybridization with probes of known sequence.
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3. The method as recited in claim 1 wherein said confirming step comprises the step of constructing an oligonucleotide probe having a continuous sequence of nucleotides or the complement thereto as found in the unknown sequence but not in known sequences;

exposing, under stringent hybridization conditions, the labeled oligonucleotide probe to a sample suspected of containing the oligonucleotide sequence; and

identifying the presence of a hybridization complex between the labeled oligonucleotide probe and the previously unknown nucleic acid in the sample.

4. The method as recited in claim 1 further comprising a second comparing step wherein a second continuous run of nucleotide sequence is compared with known nucleotide sequences.

5. The method as recited in claim 1 wherein said confirming step comprises the steps of: exposing the sample under stringent hybridization conditions to an oligonucleotide probe complementary to a portion of said unknown nucleotide sequence but not to a known nucleotide sequence; and

separating a fraction containing a nucleic acid hybridizing to the labeled oligonucleotide from other fractions of the sample.

6. The method as recited in claim 5 further comprising the step of microscopically examining the fraction containing the labeled oligonucleotide probe.

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7. The method as recited in claim 5 further comprising the step of sequencing nucleic acid in the fraction containing the labeled oligonucleotide probe.

5 8. The method as recited in claim 5 further comprising a second exposing step wherein the labeled oligonucleotide probe is exposed under stringent hybridization conditions to a second sample.

10 9. The method as recited in claim 8 wherein said second exposing step comprises the step of obtaining a sample from a second individual.

15 10. The method as recited in claim 8 wherein said second exposing step comprises the step of obtaining a second sample from the same individual.

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